

PHOTOVOLTAIC POWER CONVERTER SYSTEM WITH A  
CONTROLLER CONFIGURED TO ACTIVELY  
COMPENSATE LOAD HARMONICS

ABSTRACT

Photovoltaic power converter system including a controller configured to reduce load harmonics is provided. The system comprises a photovoltaic array and an inverter electrically coupled to the array to generate an output current for energizing a load connected to the inverter and to a mains grid supply voltage. The system further comprises a controller including a first circuit coupled to receive a load current to measure a harmonic current in the load current. The controller includes a second circuit to generate a fundamental reference drawn by the load. The controller further includes a third circuit for combining the measured harmonic current and the fundamental reference to generate a command output signal for generating the output current for energizing the load connected to the inverter. The photovoltaic system may be configured to compensate harmonic currents that may be drawn by the load.